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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,775	09/29/2003	Keiji Mabuchi	09792909-5695	2481

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EXAMINER	
HOGUE, DENNIS A	
ART UNIT	**PAPER NUMBER**
2622	

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02/23/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. This is the fifth Office Action based on the 10/673,775 application filed 9/29/2003. Claims 6-11, 13-18, and 20-27 are currently pending and have been considered below. Claims 1-5, 12, and 19 have been cancelled.

Response to Amendment

2. The proposed amendments to the claims received on 2/8/2010 are not being entered into the record because they raise new issues that would require further consideration and/or search.

Response to Arguments

3. Applicant's arguments filed 2/8/2010 have not been considered. The reason is that the arguments are all directed towards the cited references not teaching newly added limitations to the claims. These newly added limitations raise new issues and therefore are not being entered into the record at this time.

Remarks

4. Regarding the proposed amendment of claim 6, the examiner concludes that the amendment would overcome most of the rejections under USC 112. However, the proposed claim states that each pixel includes a photoelectric conversion element formed in each of said plurality of well regions. In the examiner's opinion, this is not accurate as to the disclosed invention, or is at least unclear. It implies that the photodiode of each pixel is formed in multiple well regions. Rather, the examiner believes the claim language should more accurately state that each pixel includes a photoelectric conversion element formed in one well region of said plurality of well regions. Further, the voltage control unit of each pixel, which appears to be simply the connection 118 to P-well control line (see Fig. 2), does not apply a variable substrate bias voltage to each of said plurality of well regions. Rather, the voltage control unit of each particular pixel only applies a variable substrate bias voltage to the particular well region on which it is formed. That is, the examiner believes the following would better overcome rejection under USC 112:

6. (Currently Amended) A solid-state complementary metal-oxide semiconductor type image pickup device, comprising:

a semiconductor substrate having a plurality of well regions formed thereon; and

a pixel unit having a plurality of **pixel rows** on the semiconductor substrate, **each pixel row comprising a plurality of pixels formed in one of the well regions of said plurality of well regions, wherein for a first pixel row of said plurality of pixel rows** each pixel in the **plurality of pixels includes**

(a) a photoelectric conversion element formed in **a first well region** of said plurality of well regions to receive light and produce a signal charge in accordance with an amount of the received light;

(b) a readout section formed in **said first well region** of said plurality of well regions to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing;

(c) a node connected to the photoelectric conversion element through the readout section; and

(d) **a** voltage control unit to apply a variable substrate bias voltage to **said first well region** of said plurality of well regions dependent upon the read out of the signal charge by said readout section,

wherein the plurality of well regions are electrically isolated from each other along each of the pixel rows.

5. Note however, that the examiner is not stating that the above would be allowable. In fact, in the examiner's opinion, the above would still be rejectable in view of Chi (US Patent 6,501,109, see at least col. 4 lines 5-9 and col. 5 lines 62-65). That is why the examiner recommends further defining the aspects of element (d).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS HOGUE whose telephone number is (571)

270-5089. The examiner can normally be reached on Mon. - Thurs., 8:00 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DH

Examiner

2/17/2010

/Jason Whipkey/
Primary Examiner, Art Unit 2622